

REMARKS

This is in response to the Office Action dated September 3, 2003. New claims 9-10 have been added. Thus, claims 1-10 are now pending.

General

For purposes of example and without limitation, certain example embodiments of this invention relate to a method of making a semiconductor device. In particular, certain example embodiments of the instant invention relate to such a method where excessive polishing (e.g., via CMP) of an interlayer insulating film at an edge portion thereof is prevented (or reduced). For example, referring to the Fig. 1 embodiment of the instant application, to prevent (i.e., reduce) excessive polishing of the second interlayer insulating film 6 in the neighborhood of the wafer edge 4, silicon nitride stopper film 3 is formed in advance such that it remains only in a region at the edge of the wafer. Then, the second interlayer insulating film 6 is deposited thereover. CMP is thereafter performed so as to polish the interlayer insulating film 6 as shown in Fig. 1(c), and the stopper film 3 prevents excessive polishing of the interlayer insulating film at the edge of the device.

Fig. 5 illustrates another example non-limiting embodiment of the instant invention, where the stopper layer 17 is formed *over* the interlayer insulting film 16 at an edge thereof. When both films 16 and 17 are polished via CMP, the presence of stopper 17 over film 16 at the edge thereof prevents excessive polishing of the interlayer

insulating film 16 at the edge thereof. After CMP, the stopper layer 17 is removed as shown in Fig. 5(c).

Claims 1-2 are objected to for formality purposes in paragraph 1 of the Office Action. It is respectfully submitted that the changes to claims 1-2 and 8 herein address and overcome any potential informality issue in this regard.

Claim 1

Claim 1 stands rejected under 35 U.S.C. Section 102(e) as being allegedly anticipated by Kuehne (US 6,372,605). This Section 102(e) rejection is respectfully traversed for at least the following reasons.

Claim 1 requires "a stopper layer is formed *only at an edge* region of the device where otherwise the interlayer insulating film would be excessively polished through the chemical mechanical polishing, wherein the stopper layer is formed before or after forming the interlayer insulating film." For example, Fig. 1 of the instant application illustrates that the stopper layer 3 is formed only at an edge region of the device. The cited art fails to disclose or suggest this aspect of claim 1.

Kuehne discloses in Fig. 4 an alleged stopper layer 446. However, Kuehne significantly differs from the invention of claim 1 because Kuehne's stopper layer 446 is provided over *most* of the substrate – not "only at an edge region" thereof as required by claim 1. This is because Kuehne's stopper layer 446 must be formed adjacent all trenches in the substrate, and such trenches are necessarily formed in many locations throughout the entirety of the substrate since they are used for isolation purposes as is known in the

art. Thus, it is clear that Kuehne fails to disclose or suggest a stopper layer formed "only at an edge region" of the device as required by claim 1.

Other Claims

Claim 9 requires "forming a stopper layer so that the stopper layer is located at an edge portion of the device but not at any central portion of the device." Kuehne clearly fails to disclose or suggest this aspect of claim 9. Instead, Kuehne teaches directly away from claim 9 because Kuehne's layer 446 is required to be located at many locations adjacent all trenches over the entirety of the device, including in the central portion thereof. Kuehne cannot render claim 9 unpatentable in any way.

Claim 10 requires "forming a stopper layer over only an edge portion of the interlayer insulating film so that the stopper layer is located at an edge portion of the device but not at any central portion of the device." Kuehne fails to disclose or suggest this aspect of claim 10.

Conclusion

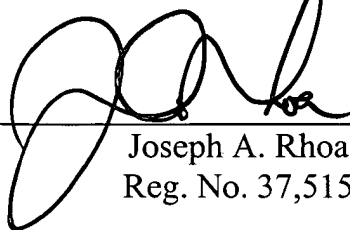
For at least the foregoing reasons, it is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

KAMIKUBO, Noritaka
Appl. No. 10/062,543
December 2, 2003

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____

A handwritten signature in black ink, appearing to read 'Joseph A. Rhoa', is written over a horizontal line.

Joseph A. Rhoa
Reg. No. 37,515

JAR:caj
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100